

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Hitoshi SAKAMOTO, et al.

SERIAL NO: NEW APPLICATION

GAU:

FILED: HEREWITH

EXAMINER:

FOR: HEXAGONAL BORON NITRIDE FILM WITH LOW DIELECTRIC CONSTANT, LAYER DIELECTRIC FILM AND METHOD OF PRODUCTION THEREOF, AND PLASMA CVD APPARATUS

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicant(s) wish to disclose the following information.

REFERENCES

- ☒ The applicant(s) wish to make of record the references listed on the attached form PTO-1449. Copies of the listed references were filed on June 15, 2001, November 29, 2001 and were also entered by the U.S. Patent Office on December 18, 2002 and June 20, 2003 in U.S. Application Serial No. 09/880,932 filed June 15, 2001, pending, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

RELATED CASES

- ☐ Attached is a list of applicant's pending application(s) or issued patent(s) which may be related to the present application. A copy of the patent(s), together with a copy of the claims and drawings of the pending application(s) is attached along with PTO 1449.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

CERTIFICATION

- ☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

DEPOSIT ACCOUNT

- ☒ Please charge any additional fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
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CERTIFICATION

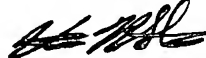
- ☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
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Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. 242859US0DIV		SERIAL NO. NEW APPLICATION	
LIST OF REFERENCES CITED BY APPLICANT				APPLICANT Hitoshi SAKAMOTO, et al.			
				FILING DATE HEREWITH		GROUP	
<b>U.S. PATENT DOCUMENTS</b>							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA	5,324,690	06/28/94	Gelatos, et al.			
	AB	6,435,130	08/2002	Takaki, et al.			
	AC	6,095,084	08/2000	Shamouilian, et al.			
	AD	4,920,917	05/1990	Nakatani, et al.			
	AE	5,387,288	02/1995	Shatas			
	AF	6,070,551	06/2000	Li, et al.			
	AG	5,891,252	04/1999	Yokogawa, et al.			
	AH	6,015,591	01/2000	Li, et al.			
	AI	5,458,919	10/1995	Okana, et al.			
	AJ						
	AK						
	AL						
	AM						
	AN						
<b>FOREIGN PATENT DOCUMENTS</b>							
		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION		
					YES	NO	
	AO	2000-133710	05/12/00	Japan			
	AP						
	AQ						
	AR						
	AS						
	AT						
	AU						
	AV						
<b>OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)</b>							
	AW	H. Yokoyama, et al., "GROWTH MECHANISM OF CUBIC BORON NITRIDE PREPARED BY PLASMA CVD", Proc. 12th Symp. On Ion Source and Ion Assisted Technology (ISIAT), pgs. 381-386, 1989.					
	AX	M.N.P. Carreno, et al., "LOW TEMPERATURE PLASMA ENHANCED CHEMICAL VAPOUR DEPOSITION BORON NITRIDE", Elsevier Science S. A. 1997 pgs. 008-011					
	AY	T.A. Friedmann, et al., "PULSED LASER DEPOSITION OF BN ONTO SILICON (100) SUBSTRATES AT 600°C", Thin Solid Films, (1994) Vol. 237, pgs. 48-56					
	AZ	M.Z. Karim, et al., "CHARACTERIZATION OF MIXED-PHASE BN THIN FILMS DEPOSITED BY PLASMA CVD", Surface and Coatings Technology (1993) Vol. 60, pgs. 502-505				<input checked="" type="checkbox"/> Additional References sheet(s) attached	
Examiner					Date Considered		

\*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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				FILING DATE  HEREWITH		GROUP	
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)							
	AAA	S.B. Hyder, et al., Journal of the Electrochemical Society, Vol. 123, No. 11, pgs. 1721-1724, "STRUCTURE AND PROPERTIES OF BORON NITRIDE FILMS GROWN BY HIGH TEMPERATURE REACTIVE PLASMA DEPOSITION", November 1976					
	AAE	S.V. Nguyen, et al., Journal of the Electrochemical Society, Vol. 141, No. 6, pgs. 1633-1638, "PLASMA-ASSISTED CHEMICAL VAPOR DEPOSITION AND CHARACTERIZATION OF BORON NITRIDE FILMS", June 1994					
	AAC	A.V. Gelatos, et al., Materials Research Society Symposium Proceedings, Vol. 260, pgs. 347-354, "THE PROPERTIES OF A PLASMA DEPOSITED CANDIDATE INSULATOR FOR FUTURE MULTILEVEL INTERCONNECTS TECHNOLOGY", 1992					
	AAQ	T. Sugino, et al., Japanese Journal of Applied Physics, Vol. 39, No. 11A, pgs. 1101-1104, "DIELECTRIC CONSTANT OF BORON NITRIDE FILMS SYNTHESIZED BY PLASMA-ASSISTED CHEMICAL VAPOR DEPOSITION", November 1, 2000					
	AAE						
	AAE						
	AAG						
	AAH						
	AAI						
	AAJ						
	AAK						
	AAL						
	AAM						
	AAN						
	AAQ						
	AAP						
	AAQ						
Examiner						Date Considered	
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